towards confirming me in the view that I have for a long time held, that empyema and simple pleuritic effusion have very little in common either in their clinical march, their pathology, or their ultimate event.

Of the 40 cases of empyema, 32 cases are well, 6 are dead, and of 2 there is no return. Of the 6 fatal cases, 1 died of chronic Bright's disease (not lardaceous), 1 died of croup when 4 years old, 2 died in hospital of "exhaustion from prolonged discharge," and in 2 cases the cause of death could not be ascertained.

My own conclusions, based upon grounds of which the preceding observations form only a part, are practically those appended by Mayor⁶ to an excellent thesis on the after-event in pleuritic effusion, namely:

1. "The majority of cases of simple idiopathic pleurisy, or of pleurisy from exposure to cold, conceal or reveal a tuberculous process."

2. "A careful study of the lung in the neighbourhood of the effusion is more important in regard to the prognosis in any given case than the study of the effusion itself."

3. "The immediate prognosis in cases of pleuritic effusion is, under present conditions of treatment, almost always favourable; the remoter prognosis, on the contrary, should always be most guarded."

THE TREATMENT OF PLEURISY WITH EFFUSION.¹

By VINCENT D. HARRIS, M.D.LOND., F.R.C.P.,

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THE subject I have chosen as that upon which to offer you some remarks this afternoon is one about which a very great deal has been and is being said and written. The question of the treatment of pleural effusion has received attention from both physicians and surgeons, and may be said to be placed upon the hypothetical boundary line which separates the province of medicine from that of surgery. The affection is, indeed, sufficiently common and sufficiently serious to make it of importance that every medical man, be he physician or be he surgeon, should have a definite idea as to the line of treatment to be adopted under the various circumstances in which pleural effusion occurs.

I do not propose to bring before you any exhaustive treatise upon this subject. This would be, in my opinion, undesirable even if possible. I shall rather confine my attention almost exclusively to my own experience, which a connection with a special chest hospital for many years has rendered somewhat extensive. I must warn you not to expect anything very new upon this, which may be called a well-worn subject.

Effusions into the pleural cavity, even in large amounts, are not by any means always diagnosed. First, because the physical signs of such effusions do not present themselves in orthodox form, supposing the chest is examined carefully; secondly, because it not infrequently happens that patients suffering from pleural effusion are so little inconvenienced, that they pursue their usual avocations, and consult a medical man for symptoms, it may be, of dyspepsia, which do not suggest an examination of the chest; and thirdly, because pleural effusion is very often secondary to some other affection within the chest, as, for example, to tubercle of the lung, cardiac disease, or aneurysm of the aorta, to which one's attention is more particularly directed.

Thus it happens that any increase in the dyspnoea, pain, or other symptom which the original affection had produced is often put down to an increase in the affection itself, and not to its real cause, namely, an intercurrent pleurisy. There can be no doubt in the minds of those accustomed to see many necropsies, that undiagnosed, and therefore unrelieved, pleural effusion is answerable for the deaths of many affected with chronic diseases. Such patients would, of course, have died from the primary affection after a varying time, but unless pleural effusion had happened, not just then. I may illustrate this by a reference to a *post-mortem* register nearest to hand. In a record of about seventy necropsies at the City of London Hospital for Diseases of the Chest, Victoria Park, I find that in nineteen the pleura was more or less affected; in thirteen cases, the fluid in one or both cavities

was very excessive; and in four cases, the record says that the pleural cavity was full of fluid. Certainly one would imagine that death might have been caused in four out of seventy cases, at the very least, by the intercurrent pleural affection, and not by the original disease. One other point with regard to the diagnosis of pleural effusion; it is, of course, best in all cases of doubt to insert the needle of a small syringe, and to withdraw a specimen of the fluid, if fluid there be, but sufficient stress has not been laid upon the necessity of employing a sufficiently long needle, nearly twice the length of that supplied with the ordinary morphine syringe, as without it, in cases of very thick-walled sacs, you may fail altogether in your attempt to reach the interior. I have quite lately seen a case in which one or two preliminary trials with an ordinary short needle failed to withdraw pus from a chest until a very long needle, about 5 or 6 inches, having been employed, the pus was reached.

Having arrived at the certain diagnosis of fluid within the pleural cavity, the question naturally arises: What is best to be done under the circumstances of the case? 1. Are we to leave the fluid to be absorbed by Nature's unaided efforts? This used to be the routine practice in a majority of cases.² It is certainly a fact that in some cases a pleural effusion disappears in a comparatively short time if left to itself, even if we regard as apocryphal those cases in which it has been stated that the largest effusions have been absorbed in a day or so. We have all, no doubt, watched cases in which absorption is taking place, noting the shrinkage of the area of fluid from day to day. It is by no means easy, it must be confessed, to understand how the fluid is absorbed—whether by the blood vessels or by lymphatics, or by both—more especially when we recollect that the surfaces of the pleura are usually covered by thick layers of fibrin, and that the blood and lymphatic vessels, thickened as they must be by this deposit, are in the condition most unfavourable for such a process. In the cases in which early absorption takes place one is tempted to imagine either that the fibrin has not been deposited upon the pleural surfaces or that the inflammation of the pleura is local and not general. It is believed by some that in many cases at any rate the upper part of the serous membrane is first inflamed; perhaps in some cases, therefore, the inflammation is localised to its primary seat. But, granting that effusions are sometimes absorbed by Nature's efforts alone, are we wait for this absorption, are we to try and help the absorption by drugs or other means, or are we to remove the fluid at once by operation? The practical summary of such questions, then, is, How long shall we leave an effusion in the chest before tapping it?

I think you will agree that it is quite impossible to lay down any arbitrary rule as to how long we are to leave an effusion before tapping it. My own plan of proceeding is as follows: If the preliminary aspiration with the small syringe has demonstrated the presence of pus, I do not delay the operation, if I can possibly help it, a single day; or again, if the physical signs reveal the presence of a large effusion of whatever nature, I recommend immediate operation. I think a patient with one side of his chest full of fluid is in considerable danger of death, and especially of death from syncope. With such a belief it behoves one to be careful not to delay the immediate and certain relief afforded by paracentesis thoracis.

If the fluid be not pus, and be moderate in amount, immediate operation is not necessary, and it is permissible to wait awhile and watch the case; in fact, to adopt the expectant treatment. As regards the use of drugs and other methods supposed to aid the absorption of the fluid, I confess I have but little faith in them. Diuretic, diaphoretic, and purgative drugs, for example, except in so much as they aid in maintaining the bodily functions in health, are, in my opinion, of little use. The exhibition of salts, the restriction of fluids in the diet, the strapping the side with mercury plaisters, and the like, although theoretically correct, have not proved, in my experience, of much practical value. I am inclined, however, to make an exception in favour of blisters and of the preparation of iodine externally, and of iodide of potassium internally. I think—I say I think—that I have seen good come of the use of these remedies in certain cases. But, at any rate, good and even generous diet—wine, cod-liver oil, maltine, preparations of iron—ought in all cases to be given, with the great object in view of improving the general health; with the same object, the patient should be allowed to get up part of the day, and, if the weather be

⁶ *De l'Avenir des Pleuritisques*. Thèse par Alois Mayor. Paris: 1887.

¹ Read at a meeting of the West Kent District of the South-Eastern Branch of the British Medical Association.

² From the table annexed I find, however, that operation of some kind was done in 24 out of 38 cases.

fine and warm, moderate exercise in the open air should be allowed.

If in the course of a few days or a week there is distinct evidence of diminution of fluid, the case is probably one in which paracentesis is not necessary, and may be left in Nature's hands.

More than a fortnight should not be allowed to elapse before tapping in a case in which the area of dullness, due to fluid, remains stationary; perhaps one should curtail even this period of expectation. If the fluid is manifestly increasing, do not delay to tap. In fact, the days are gone by in which paracentesis thoracis was a method of treatment adopted as a last resource, and we may now lay down a rule that, in cases of doubt, proceed to that method without delay.

In the case of pleurisy with effusion in children, according to my experience, the operation is particularly successful; but it is also true that in such cases there is a strong tendency towards rapid, spontaneous absorption, and of course, in such cases, one ought to give the effusion a chance of being got rid of in such a way. One must not forget, on the other hand, that in children the effusion is very often purulent, and any hectic temperature ought to indicate the operation, especially if preliminary puncture revealed the nature of the fluid.

My rules, as above mentioned, obviate one usually laid down, namely, that operations should be done if the patient show loss of flesh, feeble circulation, great debility, or failing appetite. It is best, I think, never to wait until such a condition arise. In short, my plan may be thus summarised: operate early in rapid effusions, in excessive effusions, if there be dyspnoea or other pressure symptoms, in stationary or increasing effusions, and when the fluid contained in the chest is undoubtedly purulent.

When pleural effusions arise, as in the course of other chest affections—such, for example, as phthisis, heart disease, aneurysm of the aorta, unless its amount be very small, if one wants to delay death, as is indeed our duty, there is no alternative course—paracentesis must be done, and done quickly.

Having decided to empty the chest of its fluid, it becomes necessary to decide further as to what kind of operation is the best. It would ill become me to dogmatise upon this more or less surgical point. I wish, rather, to record my own experience upon the question. Naturally the kind of operation varies with the circumstances of the case.

First of all in cases of non-purulent effusion we have two chief "close" methods of emptying the chest, or, to speak more correctly, of removing some of its contained fluid, namely, by means of an aspirator of some kind or by the syphon method. I must confess my preference for the former, in spite of the considerable prejudice which exists against it in the minds of many. This prejudice finds expression in an excellently practical paper of Dr. W. Henry White, written some years ago, as follows: "The use of the latter (that is, the aspirator) ordinarily in effusion should be disregarded, as it is a dangerous instrument in inexperienced hands, notwithstanding the brilliant results obtained by Bowditch, Dieulafoy, and others. For the instrument can be made to exert so great, so unnecessary, and so injurious a pressure within the chest that more fluid is evacuated than is prudent, and, consequently, its reaccumulation, if not transformation into empyema, is encouraged, whilst cough and other disagreeable and urgent symptoms may be induced. If this instrument should be used it should have a manometer attached, in order to be able to estimate the tension within the chest."

This opinion appears to take a very pessimistic view of the use of the aspirator. I cannot say that it accords with my experience, for, in many of my cases, that instrument has been used quite without accident. It is, moreover, in my opinion, the method freest from the danger of entrance of air. We must of course be careful to use as small a minus pressure as is compatible with success, and one must not entirely empty the chest, and must also see that the apparatus is in perfect working order. I prefer the posterior position for puncture to that more in the axillary line.

The second method, namely, by syphoning off the fluid, is, I am bound to confess, getting more and more popular, and, I think, will after a time displace the aspirator. It consists of attaching to the trocar and cannula used for the puncture an india-rubber tube sufficiently long to reach from the patient's bed to the floor: it is filled with some antiseptic solution, for example, carbolic acid, perchloride of mercury, or boric acid, and the free end of it is nipped by the fingers of an assistant below the level of some more antiseptic fluid in a vessel on the floor or raised well above the patient's bed. When the trocar is withdrawn, in an air-tight

collar, the end of the tube in the fluid is unstopped, and if the vessel has been raised it must be lowered and placed on the floor. In this way, as the attached tube is now in free communication with the cannula tube and with the fluid within the chest, a syphon action is set up and the fluid flows quietly and at a moderate rate into the vessel containing the antiseptic. If the cannula becomes stopped, the tube may be flushed out by a return current of fluid set up by raising the vessel in which the antiseptic is well above the patient's bed.

When the effusion is purulent it becomes necessary to remove it more thoroughly, and the way in which this should be done with least danger to the patient becomes a difficult question. Let me briefly recall to your minds the chief methods which have been hitherto employed.

First of all, by free incision, with or without previous tapping of the chest, with a large trocar and cannula. (This method allows free entrance of a certain amount of air into the pleura.) It is the plan usually adopted. If the whole operation is done with strict attention to antiseptic precautions the air which is admitted should be harmless, that is to say, should be free from living micro-organisms. A drainage tube is then inserted, and the side is dressed according to Lister's method. As far as my practice is concerned, after the first dressing I almost invariably combine this method with a thorough irrigation of the suppurating cavity with some disinfectant solution; for example, mercuric chloride 1 to 5 in 1,000, boric acid, or the like; and this washing out of the cavity by means of a reversed syphon action or by means of a perfusion cannula, I direct to be done each time the dressing is removed, that is to say (unless the discharge is very profuse), every two days. In simple incision of the chest there can be no complete emptying, and pus remains in certain amount in the dependent parts of the chest. By the means of the irrigation method, if sufficient time is taken, the pus may be thoroughly washed out, and the fluid which remains is quite aseptic. From a somewhat extended experience of both methods, I have no hesitation in recommending that by incision and irrigation with a large quantity of an antiseptic solution. I cannot myself speak in favour of the so-called "close" method of operating when the fluid is purulent, that is to say, the removal of the fluid by means of a simple trocar and cannula, irrigation with an antiseptic, and complete closure of the wound without entrance of air. It may answer sometimes, but generally after several such operations a free incision has to be made after all, and I really do not see why antiseptic air or gas should be worse to have in the chest than any other antiseptic fluid. Of course, there is no actual reason why the "close" method should not be tried first of all. As a matter of fact, the entrance of air into the chest through the incision is never quite free. As a safe means of irrigation in cases of empyema, and, if thought necessary, in cases of serous pleurisy, there is no better apparatus, as far as I know, than that designed by Dr. Philip Hensley, and described by him in *St. Bartholomew's Hospital Reports*, vol. xvii, p. 79, to which account, as I have no time to describe it, I must refer you.

Of the dangers of paracentesis, a long list of which one finds, very properly, tabulated in textbooks, I am inclined to think syncope is the most likely of those which are serious. It is usually due to the too rapid removal of fluid from the chest, which, of course, diminishes the extracardiac pressure. Blood-spitting also sometimes happens from removal of the extrapulmonary pressure. Of the occurrence of other dangers during or after the operation, such as embolism, I have seen no examples.

I must just mention the plan of treating empyemata by making two openings in the chest in intercostal spaces, one below and behind the other, and passing a drainage tube through the two openings. This method was the one almost always adopted when I was house-physician at St. Bartholomew's, and when antiseptic surgery was young. It is a severe operation, especially if it has been long delayed, as is usually the case, since the chest wall has become in most cases very thick. It is an operation not now to be recommended unless absolutely necessary, although, no doubt, strict attention to antiseptic precautions might be expected to make the operation more successful than it used to be.

Let us now turn to the consideration of what happens to the chest contents on removal of fluid from the pleura.

First of all, in the case of the "close" operation. As the pressure of the fluid outside of the lung is removed, and as no air replaces that which is removed, the lung is obliged to follow the movements of the thoracic walls and diaphragm, and expands, drawing in air at each inspiration, to establish an equilibrium

General Table of Pleurisy with Effusion treated in the City of London Hospital for Diseases of the Chest 1887-90.

No.	Age.	Sex.	Side Affected.	Variety of Operation (if any).	Characters of Fluid.	Duration of Stay in Hospital.	Result.
1	47	M.	Right	—	—	6 weeks	Improved.
2	57	M.	"	—	—	—	—
3	47	M.	"	Cannula trochar, 8th interspace, middle axillary line, aspirator	4 pints of offensive pus, no blood	4 weeks	Death.
4	34	F.	"	—	—	7 "	—
5	37	M.	Left	—	—	7 "	Improved.
6	22	M.	Right	Cannula and trochar	4½ pints of greenish coagulable plasma, specific gravity 1020, neutral, solid, with albumen	5 "	Recovery.
7	21	M.	Left	Aspirator, 8th space behind	5 pints serous fluid	10 "	—
8	33	F.	Right	—	—	14 "	Improved.
9	46	M.	"	—	—	—	—
10	31	M.	"	Incision 7th rib, interspace in line of left of scapula	1 pint of blood-stained bendable pus	—	—
11	16	M.	Left	—	—	—	Improved.
12	15	M.	Right	—	—	—	—
13	19	M.	Left	—	—	6 weeks	"
14	14	M.	Right	Tapped twice, 18 pints pus, 15 pints pus (blood-stained)	—	6 "	"
15	18	M.	Left	—	—	9½ "	—
16	24	M.	"	Aspirator	26 ozs. pus	7 "	Greatly improved.
17	8	M.	Right	Aspirator 1½ ins. below left of scapula	8 ozs serum	11 "	Recovery.
18	20	M.	Left	Paracentesis, 7th space, resection, discharge varying per diem 1 to 4 ozs.	34 ozs. thick pus	6 months	"
19	10	M.	"	—	—	4 weeks	—
20	46	M.	Right	Paracentesis	21 ozs. dark coloured fluid, specific gravity 1021, highly albuminous	6 "	Improved.
21	38	F.	"	Paracentesis twice	37 ozs., 39 ozs., clear fluid	—	—
22	24	M.	"	At Brompton Hospital aspirated 8 times in 4 months	45 ozs., 41 ozs., 27 ozs., 4 ozs., 40 ozs., 60 ozs., 43 ozs., 50 ozs.	—	"
				Aspirated (S.P. Hospital) middle axillary line	19 ozs. chocolate coloured fluid, thick	—	—
23	41	M.	"	Aspirated	77 ozs. dark serum	14 weeks	—
				Paracentesis	28 ozs. chocolate coloured pus	—	—
				Resection, 7th space, discharge varying from 12 to 3 ozs. per diem	24 "	—	—
24	14	F.	Left	—	—	4 months	"
25	66	F.	Right	Paracentesis	5 ozs. clear serous fluid	8 weeks	"
26	42	M.	Left	Paracentesis	38 ozs. straw coloured fluid	2 "	"
				Aspirator	—	—	—
27	23	F.	"	—	—	3 "	"
28	27	M.	"	Aspirator	104 ozs. serum	13 "	Death.
				"	38 ozs. pus (sweet smelling)	—	—
29	15	M.	Right	"	42 ozs clear serum	7 "	Improved.
30	37	M.	Left	Aspirated	20 ozs. pus (sweet smelling)	7 months	"
				"	18 "	—	—
				Aspirated and drained discharge, 1 to 3 ozs. per diem	—	—	—
31	29	M.	Right	—	Muco-pus (coughed up) offensive	11 weeks	"
32	15	M.	Left	—	—	9 "	"
33	35	M.	"	Paracentesis	20 ozs. turbid serum	11 "	"
				Aspiration	11 ozs. purulent pus	—	—
34	26	F.	Right	—	—	5 "	"
35	49	M.	Left	Aspirator	72 ozs. serum, specific gravity 1040, large quantity of albumen	6 "	"
36	21	F.	Right	—	—	11 "	—
37	29	F.	Left	Aspiration	4 ozs. pus	9 "	Improved, still in hospital.
				"	10 ozs. pus.	—	—
				Resection	96 ozs. pus (offensive)	—	—
38	50	F.	Right	Aspirated	24 ozs. clear serum	2 "	"

between the intra and extra (minus) pressure. That air commences to enter the lung at once when the fluid is being taken away, any one may convince himself by applying a stethoscope to the chest during the operation; in a short time coarse vesicular breathing may be distinctly heard. At the same time the position of the heart's apex beat may gradually change, partially, no doubt, from the re-expansion of the hitherto collapsed, or partially collapsed, lung.

If the operation of paracentesis has been long delayed, the pulmonary pleura is often covered with so thick and fibrinous a layer of false membrane that early and complete re-expansion of the lung cannot satisfactorily take place, and the result is that a minus pressure is still exerted, and constantly acts upon the contents of the chest, interfering with the action of the heart, tending to place too great a strain upon the parts of the lung which are the most expanded, from being less bound down, as well as tending to draw inwards the chest wall, upwards the diaphragm and the mediastinum towards the affected side. This untoward result is certainly a great argument in favour of early operation. I am in accord with those who do not look upon the entrance of air, if aseptic, in small amount, with any apprehension under such circumstances. Theoretically, indeed, it would seem to be a good thing, as it would diminish the partial vacuum set up by the removal of fluid.

In cases of free incision into the pleural cavity, when there is a communication more or less free between the chest and the external atmosphere, we have a condition which, speaking from a strictly physical point of view, allows no opportunity for the re-expansion of the lung. We know, however, from clinical experience, that the lung often re-expands, as may be proved from the physical signs, and we know also that not infrequently the lung expands, the discharge from the side ceases, and the patient becomes convalescent, without any marked deformity of the chest. I have several such cases under operation at the present time.

Evidently the same process of repair does not occur in all of these cases, and it must be that the former view, which looked upon every discharging empyema as likely to heal up only as an abscess cavity, by the union of granulating surfaces, is untenable. In a very interesting paper, Dr. Robertson, of the Oldham Infirmary,³ has brought forward a considerable amount of evidence in favour of what he calls the "valvular theory," to explain the speedy expansion of the lung, even in cases of so-called free incision. He believes that in a certain number of cases the aperture into the chest wall, although patent on expiration, and so adequate as an exit for pus or other fluid or air on violent expiration, is not patent on inspiration. This valvular action at the point of

³ *Medical Chronicle*, March to July, 1888.

incision our author thinks is due, first of all, to the antiseptic dressing of the wound.

"First, a large tube is inserted, then a piece of protective iodoform collodion is placed over the wound unoccupied by the tube; finally, numerous layers of moistened gauze, and then the mackintosh are applied, the whole being kept in position by a bandage. It is perfectly obvious that the protective, especially when it is coated with pus, must form an excellent valve."

At the same time, the tube is full of pus in all probability. The wound itself, too, soon becomes valvular, the edges become covered with granulations, and are speedily in full contact, and by further growth they bulge outwards, and assume the form of two soft projecting masses. Under these circumstances, air appears neither to enter nor to leave the chest; during forced expiration some air or fluid is expelled, but a violent inspiration has the effect not of opening, but of closing the valves. If Dr. Robertson's views are correct—and they appear to me to be very reasonable—an empyema, treated by incision and drainage according to the antiseptic method, is placed much in the same physical condition as a pleural effusion, simply tapped, with closure of the point of puncture. The air and fluid are gradually pumped out of the pleura, and no air enters the chest to replace them. The lungs, answering to this gradually increasing extra pulmonary or pleural minus pressure, expand gradually, whilst their expansion is accelerated and rendered permanent by the gradual growing together of the pleural surfaces.

It appears, as already stated, a very plausible explanation of certain cases of good results after free incision. I am inclined, however, to believe that it is not the only explanation. For example, it appears very likely that we have to deal very often with loculated empyemata, or with cases in which previous adhesions here and there prevent the complete collapse of the lung, which is usually assumed in operation cases. I cannot, however, devote any more time to this point.

As a result of certain cases of empyema we have great deformity of the chest and spine, and with a persistent opening constantly discharging pus. If regular and prolonged washing out of the cavity, which will not fill up with granulations, does not succeed—there are few such cases I fully believe—and when the health is obviously giving way, suggesting the possibility of amyloid disease, resection of several ribs may be done. The operation is done in the axillary line and one to two inches of the ribs chosen are removed with the bone forceps. The fifth and sixth ribs are the important ones to resect. By means of this operation the ribs can fall in more completely, and the cavity discharging pus in the pleura is put in a condition to become obliterated. I am glad to say that my experience of cases in which this operation has become necessary is small.

Before concluding this very cursory glance at the treatment of pleural effusions, I would desire to emphasise two details in the post-operative treatment:—

1. The first is the necessity of getting the patient out of bed as soon as possible, and, further, of getting him into the open air without delay. By attention to these points one is likely to cut short the long period of convalescence, and, in cases where there is an open wound, to diminish the discharge.

2. The second is this: As soon as ever it is possible, that is to say, early in cases of the "close" operation, and as soon as the discharge is small (say 3ss per diem), when there has been incision, make the patient expand his chest by regular and frequent but moderate dumbbell exercise or by drilling.

The best results I have obtained have occurred in cases in which I have insisted upon this regular muscular exercise. The extraordinary muscles of inspiration are thus brought into play, the lung expands more completely, and the chest cavity, which always has a tendency to diminish in pleural effusions after operation, has a chance of returning to its normal capacity.

A BEQUEST OF £1,003 14s., after the deduction of income tax, which it is thought will be refunded, has been made to the Hospital Sunday Fund by the late Mr. Thomas Crouch, of New Union Street, Cripplegate.

INFLUENZA IN GUATEMALA.—The first case of influenza in the Republic of Guatemala appeared in January among the artillerymen stationed in the city of New Guatemala, which is 300 miles from the nearest seaport on the Pacific. There was no case of the disease in any of the towns between Guatemala and the coast. If the facts are as stated, this would appear to be a *crux* for the contagionists.

CASE OF GASTRO-COLIC FISTULA, WITH REMARKS.

By HENRY F. A. GOODRIDGE, M.D., F.R.C.P.,
Senior Physician to the Royal United Hospital, Bath.

History.—W. W., aged 46, a commercial traveller, first came under observation six years ago. He was then suffering from acute gastric disturbance, the result of a drinking bout, in which he was wont at that period every now and then to indulge, and which always left him in much the same condition. During the intervals he had tolerably good health. On two different occasions later on, when away on his business engagements, he was attacked with severe illness, marked by acute pain in the abdomen, vomiting, and constipation; and he stated that after both of these attacks he passed blood by stool. For the six months preceding his present illness he said he never enjoyed better health in his life; and four months prior to the same event he married, and had since been living very steadily and as almost a teetotaler. Dr. Douglas Kerr, who had attended him from time to time, and who has kindly furnished me with these particulars, and permitted me to record the case, was summoned to him on November 1st, 1889. The patient stated that he had been taken suddenly ill on a journey, that he had had violent vomiting, the vomited matters being of vile smell and taste, and that nothing had passed from his bowels for four days, not even flatus, but that much of the latter came up by his mouth. He was considerably prostrate; his pulse was very weak; his tongue was foul; he had slight tenderness on pressure in the epigastric region, and there was some feeling of solid resistance there, but otherwise his abdomen presented nothing remarkable. Feeding by mouth was at once discontinued, and rectal feeding substituted, and the next day he was more comfortable and stronger; the same night, however, there was a return of vomiting, and the matters ejected were found to be decidedly faecal.

On November 5th Dr. Kerr requested me to see the patient in consultation. He was on his back, semi-recumbent, his expression was tranquil, his complexion somewhat pale, and his nutrition good, though it was stated that he had wasted. He had had no severe paroxysms of pain, nor any pain at all except occasionally a little in the left hypochondrium. He was said to go for periods of about twenty-four hours without vomiting, and then to bring up a quantity of most offensive matter. Some that was brought up the previous evening was of unmistakably faecal odour, but the light was not sufficient to be sure of its colour. His bowels had not been properly relieved for several days. His pulse was 100, small, and weak. His tongue was coated; he had at times a faecal taste in his mouth, and his breath was observed to have more or less of that odour. He had complete anorexia. There was no distension of his abdomen, the walls of which were quite flaccid; no distinct splashing sound could be produced by succussion; there was some firmness and slight tenderness on pressure in the epigastrium, otherwise he bore free manipulation of his abdomen without inconvenience. It was not known that he had passed undigested food or anything extraordinary from his bowels at any time during his illness; he had not passed much flatus. Feeling satisfied that the patient was not suffering from intestinal obstruction, I expressed the opinion that he had a gastro-colic fistula, but could not speak so confidently as to the previous disease.

November 7th. I saw him with Dr. Kerr again. He then had had a vomit of such markedly faecal character that it might have been said that he had literally vomited faeces. He was now manifestly weaker; his pulse was 120, very small, and feeble. On attempting to examine again his abdomen, although no pain was produced, he said it made him feel sick; the attempt, therefore, had to be abandoned. The next day he had a very free and natural action of the bowels, and was reported to be better; but the vomiting soon after returned, the matters continuing to be faecal, and he gradually got into an exhausted condition, and died on November 13th.

Necropsy Twenty Hours after Death.—On opening the abdomen there were no appearances of recent peritonitis, and there was no considerable distension of the intestines, which were generally of a light slate colour. The great omentum was retracted, and the arch of the colon was high up in the epigastrium, and under cover of the false ribs. The stomach was out of sight. On moving aside the small intestines, it was soon manifest that